

determining the success of the business leaders in our sample."

The data, tabulated by modern Hollerith methods, were obtained by circularizing with a well-drawn-up questionnaire persons whose names were extracted from Poor's (1928) Register of Directors. From the total of 15,101 individuals addressed, replies were received from 8,749, or nearly 58 per cent. A business leader was defined as "a person occupying a position as major executive, partner, or sole owner in a business of such size as to be of more than local importance in its field." Most of the men studied were born about 1880. Geographically, they are now concentrated in the New England and North Atlantic states, and in the large cities.

Contrary to common supposition, present-day American business leaders are neither the sons of farmers nor of wage-earners but primarily of business men (56.7 per cent.). Only 12 per cent. of the respondents had fathers who were farmers, and only 10 per cent. had fathers who were manual labourers. The farming class is decreasing in productivity of business leaders because there are fewer farmers in the regions supplying most of the leaders. The difference is being made up, not by the sons of manual labourers but by the sons of business men. The authors believe that "it is entirely possible that by the middle of the century more than two-thirds of the successful business men in the United States will be recruited from the sons of business owners (large or small) and business executives (major or minor)." They stress, however, the point that a tendency toward caste or rigid stratification is not demonstrated; although the present business leaders have come primarily from the *business class* of the past, they are not the sons primarily of past *business leaders*—only to the extent of 25 per cent.

Despite the fact that labourers (unskilled, semi-skilled, skilled) constituted 45 per cent. of the total gainfully employed population in 1880, their representation among business leaders was only 10 per cent; and though the business and professional classes constituted only 10 per cent. of this population,

their contribution was 70 per cent. "Here is the outstanding disparity: 10 per cent. of the American population produces 70 per cent. of its business leaders."

Taussig and Joslyn verify, therefore, the conclusions of all other investigators in showing that the "proletariat" or unskilled and semi-skilled workers, though a substantial proportion of the population, contribute few leaders. The fact is clear; there can be room for argument only about the explanation.

NORMAN E. HIMES.

*The Scottish Council for Research in Education: The Intelligence of Scottish Children: A National Survey of an Age-Group.* London, University of London Press, 1933. Pp. x+160. Price 5s. net.

ON June 1st, 1932, over 87,000 Scottish school children, of the age group of 10½-11½ years, sat busily at work revealing their I.Q.'s to a waiting world. This book contains the story of the great enterprise involved; of how Professor James Drever conceived the idea, and he, and a lot of others worked out the detail; of how Professor Godfrey Thomson provided the test material, and a great crowd of teachers willingly and conscientiously co-operated to produce the results. The book tells, also, in the clearest possible manner, exactly what those results were, and what among them can be regarded as of importance. Of course, it was desirable that the Group Test should produce scores that could "be interpreted in terms of some internationally recognized measure of intelligence." Accordingly Dr. Shepherd Dawson suggested that a random selection of 1,000 Scottish children should be made from among those born in 1921, and that these should be tested individually by means of the Terman revision of the Binet-Simon Scale. This also was done, and by the aid of this device it became possible to express the Group Test Scores, with some reservations, in terms of mental age and intelligence quotients.

The details of the results must be studied

in the book itself, but it is possible, within the limits of a brief review, to state the main conclusions. The average I.Q. of Scottish boys and girls born in 1921 is round about 100, that is to say it is well within the range of what is generally accepted as the average I.Q. of any unselected population. The scatter in the case of the boys was greater than that in the case of the girls, and both were somewhat greater than has been thought to be general. On the whole the groups on either side of the average were greater than they should have been according to conventional views.

The fact that the results are secured from the application of a single group test of predominantly verbal type, makes it a little difficult to draw any certain conclusions regarding the frequency of very low levels of intelligence. But it looks as if "not fewer than  $1\frac{1}{2}$  and not more than 3 per cent. of Scottish children born in 1921 fall within the category of the 'mentally defective.'" Even when it is allowed that "mentally defective" is used here in a rather wide and undefined sense the finding is not a little disturbing.

Assuming that the tests used give a reliable statistical picture, what points of general importance may be regarded as established by this investigation? None, it must be admitted, that are particularly striking. The Scottish population tested appears to be very little different—as, no doubt, would be expected—from any other comparable population that has been similarly dealt with. The experiment might, perhaps, curb the unwarrantable optimism of those who believe that the standard of educational performance required could be easily and rapidly raised. Similarly, it could be used as a check on the equally unwarrantable pessimism of those who profess to think that already educational requirements are tending to run beyond the capacities of a very large section of the normal school population. The most interesting thing, perhaps, is the rather larger scatter of I.Q.'s than was expected, for this might possibly indicate the desirability of an educational system in which both the higher

and the lower opportunities were thrown a little more widely open than they are at present. To establish or to disprove this, however, a complementary investigation of the distribution of educational opportunities in the same population would be needed.

The exact social implications of this kind of study for life beyond the schools are in fact not very easy to see. Is "average I.Q." on the whole positively connected with a tendency to accept whatever may be the existing social routine? Is there any ground for believing that on the whole factors such as ambition are related to the average in such a way that the bulk of the average individuals will be satisfied by whatever system of rewards has become conventional in society for routine work? I cannot help thinking that some way will have to be discovered of dealing with these and many similar questions, if the amount of time and energy that are consumed in large scale mental test experiments are to be fully justified.

One apparently small point of method is of considerable importance. On page 51 of this report there is a list of modifications found necessary for the Scottish use of Terman's condensed guide to the Stanford Revision of the Binet-Simon tests. These all concern verbal alterations, transliterations from American to English usages of language. That is to say, in order to get comparable test results, the material presentation of the tests had often to be changed. The changes necessary in this case are small ones. But investigators are now beginning to apply tests for comparative purposes to communities of extremely varying cultural background. It is time that a serious attempt were made to find out according to what principles parallel tests may be constructed. It seems very likely that a greater fluidity in the material of tests as they are taken from community to community would increase, and not, as seems sometimes to be assumed, destroy their comparative significance. This outstanding piece of work on the intelligence of Scottish children seems to me to point in that direction.

F. C. BARTLETT.